ACKNOWLEDGEMENT

The completion of this project is an impatiently awaited and arduous task made easier only through the numerous persons to whom I am deeply grateful.

First and foremost, I feel great pleasure in expressing my sincere and deep sense of gratitude to the supervisor of my thesis Dr. M.L.Dewangan, Professor, Deptt. of Mechanical Engineering, Govt. Engineering College, Raipur (CG) India for his scholarly guidance imperative and facile suggestions, steadfast inspiration, painstaking efforts, inherent interest, talented and enlivening advises and consistent encouragement given to me to surmount all the difficulties on my way to progress. I pay my great respect to him for going through the manuscript thoroughly and critically.

I want to extend my special thanks to Er. Ravi Kumar, MD, Cosmo Power Tech. Ltd., Raipur for all his possible help, keen interest and continuous encouragement throughout the course of this study.

I wish to express my gratitude to Dr. P. K. Pandey, Co-ordinator, centre for Environmental Science & Engineering, BIT, Durg for providing necessary facilities for conduction of testing and analysis work.

I am deeply indebted to Principal, Engg. College, Raipur, Head, Deptt. of Mechanical Engg., Chairman, Board of Study (Mechanical Engg.) and Dean, Engineering faculty, Pt. Ravishankar Shukla University, Raipur for providing me necessary facilities throughout the study.
It is beyond means and capacity to put in words my sincere gratitude to Dr. B.P. Chandra, Honorable Vice Chancellor, Pt. Ravishankar Shukla University, Raipur for his kind help and continuous encouragement throughout the course of Research.

I am greatly thankful to Prof. B.S. Narang, Director, BIT, Durg for his valuable suggestion.

I am highly thankful to my colleague Prof. S. K. Ganguly and Dr. Mohan Gupta for their kind cooperation.

Specific thanks go to my DEO Shri Chiranjeev Rao for his kind help in typing the thesis.

At last but not least I am thankful to my parents and wife for their patience, spiritual welfare and moral encouragement during the entire period of study.

Raipur
Date: 14-2-2005

ARUN ARORA